

LS 6.4 Reading Guide

How Does the Sun's Energy Power the Water Cycle?

Think about the demonstration you saw in class with the hot water and ice cubes. How do you think a substance like water changes states?

How Does Water Change State?

Read pages 192 – 194 and answer the following questions.

Fill in the following table

State of Matter	Picture of molecules	Description of molecules

What causes substances to change from one state to another?

Melting

Adding heat energy causes molecules to move _____. If there is enough heat energy molecules will _____ apart. The molecules _____, _____ or _____.

When a substance changes states and become a liquid this is called _____.

Evaporation

If the molecules move even faster they will spread _____ apart. Sometimes molecules escape from the liquid and change state to a _____. This change is called _____. Water that changes to a gas is called _____.

Freezing

When heat energy is removed from a substance the substance cools and the molecules begin to _____ down. The move _____ together. This change of state is called _____. Eventually, if enough heat energy is removed, it will change into a _____. This change of state is called _____.

Removing Heat Energy

How do you remove heat energy from a substance?

Why does the substance loose heat energy?

Deposition and Sublimation

Deposition occurs when a _____ changes directly to a _____.

An example of this is when _____
_____.

The change of state from a solid to a gas, with no intermediate liquid state, is called _____.

How Does Water Get into the Atmosphere?

Define :

humidity:

relative humidity:

Have you ever experienced a day when the relative humidity was high? Describe what it made you feel like?

Stop and Think

1. Using what you now understand about the water cycle, make your own diagram showing how water moves from Earth's surface, into the atmosphere, and back again. Identify three sources on Earth's surface from which water can come.
2. Think about the model of the water cycle that your teacher demonstrated. Use what you now know to describe what would have happened if the jar had been filled with cold water instead of hot.

Where Do Clouds Come From?

Read page 196 and look at the pictures on page 197-198 to help you answer the following question.

1. Describe how clouds form.

To help you learn what the names of the clouds mean you are going to investigate the meanings of some of the root words. Complete the following page.

Morphemes

1. List the roots in the left and write the meaning of the root below the root.
2. Write the definition in the middle column.
3. Write two examples in the right column.

Root	Definition	Examples
cumulus		
Nimbus or nimbo		
Stratus		
alto		
Cirrus or cirro		

4. Write a sentence using one of your example words for each root.

Root	Sentence

Explain

You have seen how the Sun's energy powers the water cycle and affects precipitation. With your group, explain a part of the water cycle that depends on the Sun's energy.

Update the Project Board

What's the Point? Summarize 6.4 using at least two good sentences.